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IS 10891-2 (1986): Steel Wire Ropes for Aerial Ropeways, Part 2: Track Ropes [MED 10: Wire Ropes and Wire Products]

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(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR STEEL WIRE ROPES FOR AERIAL ROPEWAYS

PART 2 TRACK ROPES

1. Scope — Covers the general requirements for steel wire track ropes used for aerial ropeways.

2. Types — i) Locked coil ropes (full lock or half lock).

ii) Spiral strand ropes.

3. Construction — The rope sizes, construction and tensile designation shall be as given in Table 1.

3.1 *Wire Tensile Strength Grade* — To produce the required rope breaking loads, the manufacturer may imply any combination of the round and shaped wire tensile strength grades given in Table 1 provided that all the round wires in any one layer in the rope are of one tensile grade and all the shaped wires in any one layer are of one grade.

TABLE 1 ROPE SIZE, CONSTRUCTION AND TENSILE DESIGNATION

Construction	Size Range mm	Tensile Designation N/mm^2
Half lock Full lock	26-52 26-80	1 275, 1 370, 1 470
1 × 19 (12/6/1) 1 × 37 (18/12/16/1)	13-26 18-32	1 470, 1 570

4. Terminology — Refer IS : 2363-1981 'Glossary of terms relating to wire ropes (*first revision*)'.

5. Rope Size and Tolerance

5.1 The size of the rope, designated as 'nominal diameter' shall be as given in Tables 2, 3 and 4.

5.2 The tolerance on diameter when measured at no load condition shall be ±2 percent of the nominal diameter specified.

6. Minimum Breaking Load — Shall be as given in Tables 2, 3 and 4.

7. General Requirements — The strands and wire ropes shall conform to IS : 6594-1977 'Technical supply conditions for steel wire ropes and strands (*first revision*)' and shall also meet the following requirements.

7.1 *Joints* — Joint in wire shall be made by welding or brazing.

7.2 *Lay* — The wire ropes shall be in right hand lay unless otherwise specified.

8. Galvanizing — Unless otherwise agreed to between the supplier and the purchaser the wire ropes shall be supplied in un-galvanized conditions.

9. Tests — The track ropes shall meet the test requirements laid down in IS : 6594-1977.

10. Marking — The size, construction, tensile strength, lay, core, coating and length of wire rope along with the order number of purchaser and any other marking which may be specified by the purchaser shall be legibly stamped upon a metallic tag securely attached, when wire ropes are supplied in coils. In case, wire ropes are supplied in reels, the information may be stencilled on both sides of the reels or stencilled on one side of the reel and metallic tag giving the information may be attached on the other side of the reel.

Adopted 10 September 1986

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BUREAU OF INDIAN STANDARDS
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Wire Ropes and Wire Products Sectional Committee, EDC 32; Steel Wire Ropes Subcommittee, EDC 32 : 2 [Ref : Doc : EDC 32 (3946)]

10.1 *Certification Marking* — Details available with the Bureau of Indian Standards.

TABLE 2 BREAKING LOAD AND MASS FOR LOCKED COIL WIRE ROPES

(*Clauses* 5.1 *and* 6)

Nominal Diameter	Approximate Mass	Mass Minimum Breaking Load (kN) Corresponding to Tensile Designation of Wires of		
		1 275	1 370	1 470
(1)	(2)	(3)	(4)	(5)
mm	kg/100 m	N/mm^2	N/mm^2	N/mm^2
26	382	487·6	524	563
28	441	566·7	609	652
30	501	650·5	699	749
32	576	739·8	795	852
34	651	835·7	898	962
36	729	940·0	1 010	1 080
38	813	1 042·3	1 120	1 210
40	900	1 154·0	1 240	1 330
42	993	1 275·0	1 370	1 470
44	1 090	1 396·0	1 500	1 610
46	1 190	1 535·6	1 650	1 760
48	1 300	1 656·6	1 780	1 920
50	1 410	1 749·6	1 880	2 080
52	1 520	1 898·5	2 040	2 240
54	1 640	2 056·7	2 210	2 420
56	1 760	2 196·3	2 360	2 610
58	1 890	2 363·8	2 540	2 790
60	2 030	2 531·4	2 720	2 990
62	2 160	2 699·0	2 900	3 200
64	2 300	2 875·7	3 090	3 310
66	2 450	3 052·5	3 280	3 520
68	2 600	3 248·0	3 490	3 730
70	2 760	3 443·4	3 700	3 960
72	2 920	3 638·8	3 910	4 200
74	3 080	3 852·9	4 140	4 430
76	3 250	4 057·6	4 360	4 670
78	3 420	4 271·7	4 590	4 920
80	3 600	4 495·0	4 830	5 180

TABLE 3 BREAKING LOAD AND MASS OF 1 × 19 (12/6/1) CONSTRUCTION

(*Clauses* 5.1 *and* 6)

Nominal Diameter	Approximate Mass	Minimum Breaking Load (kN) Corresponding to Tensile Designation of Wires of	
		1 470	1 570
(1)	(2)	(3)	(4)
mm	kg/100 m	N/mm^2	N/mm^2
14	97·0	145	162
16	127	188	211
18	161	232	267
20	198	288	330
22	240	348	399
24	285	414	475
26	334	486	557

TABLE 4 BREAKING LOAD AND MASS OF 1 × 37 (18/12/6/1) CONSTRUCTION

(*Clauses* 5.1 *and* 6)

Nominal Diameter	Approximate Mass	Minimum Breaking Load (kN) Corresponding to Tensile Designation of Wires of	
		1 470	1 570
(1)	(2)	(3)	(4)
mm	kg/100 m	N/mm^2	N/mm^2
18	159	214·6	260
20	196	265	321
22	237	333	390
24	282	372	464
26	331	437	543
28	383	501	631
32	501	654	824

EXPLANATORY NOTE

Ropes of locked coil design of full lock or half lock construction may be generally used in heavy duty ropeways.

This standard is being issued in following two parts:

IS : 10891 (Part 1) Haulage ropes

IS : 10891 (Part 2) Track ropes

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